### **B.3 – CUMULATIVE SCENARIO**

Testimony of Susan V. Lee

### **B.3.1** INTRODUCTION

Preparation of a cumulative impact analysis is required under both CEQA and NEPA. "Cumulative impact" is the impact on the environment which results from the incremental impact of the Proposed Project when considered with other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such other actions (40 CFR §1508.7).

Under CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" (14 Cal Code Regs §15130(a)(1)). Cumulative impacts must be addressed if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable" (14 Cal Code Regs §15130(a)). Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (14 Cal Code Regs §15164(b)(1)). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

CEQA also states that both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, "but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness, and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (14 Cal Code Regs §15130(b)).

NEPA states that cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR §1508.7). Under NEPA, both context and intensity are considered. When considering intensity of an effect, we consider "[w]hether the action is related to other actions with individually minor but cumulatively significant impacts. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts." 40 CFR §1508.27(b)(7).

### B.3.2 RENEWABLE RESOURCES IN CALIFORNIA

A large number of renewable projects have been proposed on BLM managed land, State land, and private land in California. As of January 2010, there were 244 renewable projects proposed in California and in various stages of the environmental review process or under construction. As of December 2009, 49 of these projects, representing approximately 10,500 MW, were planning on requesting American Recovery and Reinvestment Act funds from the Federal government. Solar, wind, and geothermal development applications have requested use of BLM land, including approximately 1 million acres of the California desert. State and private lands have also been targeted for renewable solar and wind projects.

**Cumulative Figures 1 and 2** and **Cumulative Tables 1A and 1B** illustrate the numerous proposed renewable projects on BLM, State and private land in California. In addition, nearly 80 applications for solar and wind projects are being considered on BLM land in Nevada and Arizona.

**Likelihood of Development.** The large renewable projects now described in applications to the BLM and on private land are competing for utility Power Purchase Agreements, which will allow utilities to meet state-required Renewable Portfolio Standards. Not all of the projects listed in **Tables 1A** and **1B** will complete the environmental review, and not all projects will be funded and constructed. It is unlikely that all of these projects will be constructed for the following reasons:

- Not all developers will develop the detailed information necessary to meet BLM and Energy Commission standards. Most of the solar projects with pending applications are proposing generation technologies that have not been implemented at large scales. As a result, preparing complete and detailed plans of development (PODs) is difficult, and completing the required NEPA and CEQA documents is especially timeconsuming and costly.
- As part of approval by the appropriate Lead Agency under CEQA and/or NEPA (generally the Energy Commission and/or BLM), all regulatory permits must be obtained by the applicant or the prescriptions required by the regulatory authorities incorporated into the Lead Agency's license, permit or right-of-way grant. The large size of these projects may result in permitting challenges related to endangered species, mitigation measures or requirements, and other issues.
- Also after project approval, construction financing must be obtained (if it has not been obtained earlier in the process). The availability of financing will be dependent on the status of competing projects, the laws and regulations related to renewable project investment, and the time required for obtaining permits.

**Incentives for Renewable Development.** A number of existing policies and incentives encourage renewable energy development. These incentives lead to a greater number of renewable energy proposals. Example of incentives for developers to propose renewable energy projects on private and public lands in California, Nevada and Arizona, include the following:

- U.S. Treasury Department's Payments for Specified Energy Property in Lieu of Tax Credits under §1603 of the American Recovery and Reinvestment Act of 2009 (Public Law 111-5) – Offers a grant (in lieu of investment tax credit) to receive funding for 30% of their total capital cost at such time as a project achieves commercial operation (currently applies to projects that begin construction by December 31, 2010 and begin commercial operation before January 1, 2017).
- U.S. Department of Energy (DOE) Loan Guarantee Program pursuant to §1703 of Title XVII of the Energy Policy Act of 2005 Offers a loan guarantee that is also a low interest loan to finance up to 80% of the capital cost at an interest rate much lower than conventional financing. The lower interest rate can reduce the cost of financing and the gross project cost on the order of several hundred million dollars over the life of the project, depending on the capital cost of the project.

#### B.3.3 DEFINITION OF THE CUMULATIVE PROJECT SCENARIO

Cumulative impacts analysis is intended to highlight past actions that are closely related either in time or location to the project being considered, catalogue past projects and discuss how they have harmed the environment, and discuss past actions even if they were undertaken by another agency or another person. Most of the projects listed in the cumulative projects tables (**Cumulative Tables 1, 2, and 3** at the end of this section) have, are, or will be required to undergo their own independent environmental review under either CEQA.

Under CEQA, there are two acceptable and commonly used methodologies for establishing the cumulative impact setting or scenario: the "list approach" and the "projections approach". The first approach would use a "list of past, present, and probable future projects producing related or cumulative impacts." 14 Cal Code Regs §15130(b)(1)(A). The second approach is to use a "summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact" (14 Cal Code Regs §15130(b)(1)(B)). This Staff Assessment/Draft Environmental Impact Statement (SA/DEIS) uses the "list approach" for purposes of state law to provide a tangible understanding and context for analyzing the potential cumulative effects of a Project.

Under NEPA, an EIS must provide a sufficiently detailed catalogue of past, present, and reasonably foreseeable future projects, and provide an adequate analysis of how these projects, in conjunction with the proposed action, are thought to have impacted or are expected to impact the environment. While NEPA requires an adequate cataloging of past projects, it also requires a discussion of consequences of those past projects. NEPA is designed to inform decision making and through disclosure of relevant environmental considerations, permit informed public comment.

In order to provide a basis for cumulative analysis for each discipline, this section provides information on other projects in both maps and tables. The Energy Commission and the BLM have identified the California desert as the largest area within which cumulative effects should be assessed for all disciplines, as shown in three maps and accompanying tables. However, within the desert region, the specific area of cumulative effect varies by resource. For this reason, each discipline has identified the geographic scope for the discipline's analysis of cumulative impacts. **Cumulative Figures 1, 2, and 3** are on the following pages, and **Cumulative Tables 1, 2, and 3** are presented at the end of this section.

Cumulative Figure 3 (Newberry Springs/Ludlow Area Existing and Future/Foreseeable Projects) and Cumulative Tables 2 and 3 define the projects in the immediate vicinity of the Calico Solar Project (formerly the Stirling Energy Systems Solar One Project). The area included on these tables consists of an approximate 15 to 20-mile radius around the project site. Table 2 presents existing projects and Table 3 presents future foreseeable projects. Both tables indicate project name, type, location, and status. This data is presented for consideration within each discipline.

### B.3.4 APPROACH TO CUMULATIVE IMPACT ANALYSIS

This Staff Assessment/Draft EIS evaluates cumulative impacts within the analysis of each resource area, following these steps:

- 1. Define the geographic scope of cumulative impact analysis for each discipline, based on the potential area within which impacts of the Calico Solar Project could combine with those of other projects.
- 2. Evaluate the effects of the Calico Solar Project in combination with <u>past and present</u> (existing) <u>projects</u> within the area of geographic effect defined for each discipline.
- 3. Evaluate the effects of the Calico Solar Project with <u>foreseeable future projects</u> that occur within the area of geographic effect defined for each discipline.

Each of these steps is described below.

### GEOGRAPHIC SCOPE OF CUMULATIVE ANALYSIS

The area of cumulative effect varies by resource. For example, air quality impacts tend to disperse over a large area, while traffic impacts are typically more localized. For this reason, the geographic scope for the analysis of cumulative impacts must be identified for each resource area.

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of each analysis is based on the topography surrounding the Calico Solar Project and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects will often extend beyond the scope of the direct effects, but not beyond the scope of the direct and indirect effects of the proposed action and alternatives.

In addition, each project in a region will have its own implementation schedule, which may or may not coincide or overlap with the Calico Solar Project's schedule. This is a consideration for short-term impacts from the Calico Solar Project. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the Calico Solar Project.

### PROJECT EFFECTS IN COMBINATION WITH FORESEEABLE FUTURE PROJECTS

The intensity, or severity, of the cumulative effects should consider the magnitude, geographic extent, duration and frequency of the effects (CEQ, 1997). The magnitude of the effect reflects the relative size or amount of the effect; the geographic extent considers how widespread the effect may be; and the duration and frequency refer to whether the effect is a one-time event, intermittent, or chronic (CEQ, 1997).

Each discipline evaluates the impacts of the proposed project on top of the current baseline; the past, present (existing) and reasonably foreseeable or probable future projects in the Calico Solar Project vicinity as illustrated in Cumulative Figure 3 (Newberry Springs/Ludlow Area Existing and Future/Foreseeable Projects) and Cumulative Tables 2 (Existing Projects) and 3 (Future/Foreseeable Projects).

Reasonably foreseeable projects that could contribute to the cumulative effects scenario depend on the extent of resource effects, but could include projects in the immediate Ludlow area as well as other large renewable projects in the California, Nevada, and Arizona desert regions. These projects are illustrated in **Cumulative Figures 1, 2, and 3**. As shown in the map and table, there are a number of projects in the immediate area around Calico Solar Project whose impacts could combine with those of the proposed project. As shown on **Cumulative Figure 1** and in **Table 1**, solar and wind development applications for use of BLM land have been submitted for approximately 1 million acres of the California Desert Conservation Area. Additional BLM land in Nevada and Arizona also has applications for solar and wind projects.

Cumulative Table 1A
Renewable Energy Projects on BLM Land in the California Desert

<b>BLM Field Office</b>	Number of Projects & Acres	Total MW
SOLAR ENERGY		
Barstow Field Office	18 projects 132,560 acres	12,875 MW
El Centro Field Office	7 projects 50,707 acres	3,950 MW
Needles Field Office	17 projects 230,480 acres	15,700 MW
Palm Springs Field Office	17 projects 123,592 acres	11,873 MW
Ridgecrest Field Office	4 projects 30,543 acres	2,835 MW
TOTAL – CA Desert District	63 projects 567,882 acres	47,233 MW
WIND ENERGY		•
Barstow Field Office	25 projects 171,560 acres	n/a
El Centro Field Office	9 projects (acreage not given for 3 of the projects) 48,001 acres	n/a
Needles Field Office	8 projects 115,233 acres	n/a
Palm Springs Field Office	4 projects 5,851 acres	n/a
Ridgecrest Field Office	16 projects 123,379 acres	n/a
TOTAL – CA Desert District	62 projects 433,721 acres	n/a

Source: Renewable Energy Projects in the California Desert Conservation Area identifies solar and wind renewable projects as listed on the BLM California Desert District Alternative Energy Website (BLM 2009)

### Cumulative Table 1B Renewable Energy Projects on State and Private Lands

Project Name	Location	Status
SOLAR PROJECTS		
Solargen Panoche Valley Solar Farm (400 MW Solar PV)	San Benito County	EIR in progress
Maricopa Sun Solar Complex (350 MW Solar PV)	Kern County	Information not available
Panoche Ranch Solar Farm (250 MW Solar PV)	Kern County	Information not available
Gray Butte Solar PV (150 MW Solar PV)	Los Angeles County	Information not available
Monte Vista (126 MW Solar PV)	Kern County	Information not available
San Joaquin Solar 1 and 2 (107 MW Solar hybrid)	Fresno	Under environmental review
NRG Alpine Suntower (40 MW solar PV and 46 MW solar thermal)	Los Angeles	Information not available
Palmdale Hybrid Power Project Unit 1 (50 MW solar thermal, part of a hybrid project)	City of Palmdale	Under environmental review
Lucerne Valley Solar (50 MW solar PV)	San Bernardino	Under environmental review
Lost Hills (32.5 solar PV)	Kern County	Information not available
Tehachapi Photovoltaic Project (20 MW solar PV)	Kern County	Information not available
Sun City Project Phase 1 (20 MW solar PV)	Kings County	Information not available
Boulevard Associates (20 MW solar PV)	San Bernardino County	Information not available
Stanislaus Solar Project I (20 MW solar PV)	Stanislaus County	Information not available
Stanislaus Solar Project II (20 MW solar PV)	Stanislaus County	Information not available
Synapse Solar 2 (20 MW solar PV/solar thermal)	Kings	Information not available
T, squared, Inc. (19 MW solar PV)	Kern County	Information not available
Rancho Seco Solar Thermal (15-17 MW solar trough)	Sacramento County	Information not available
Global Real Estate Investment Partners, LLC (solar PV)	Kern County	Information not available
Recurrent Energy (solar PV)	Kern County	Information not available

Project Name	Location	Status
Man-Wei Solar (solar PV)	Kern County	Information not available
Regenesis Power for Kern County Airports Dept.	Kern County	Information not available
Abengoa Mojave Solar Project (250 MW solar thermal)	San Bernardino County, Harper Lake	Under environmental review
Rice Solar Energy Project (150 MW solar thermal)	Riverside County, north of Blythe	Under environmental review
3 MW solar PV energy generating facility	San Bernardino County, Newberry Springs	MND published for public review
Blythe Airport Solar 1 Project (100 MW solar PV)	Blythe, California	MND published for public review
First Solar's Blythe (21 MW solar PV)	Blythe, California	Under construction
California Valley Solar Ranch (SunPower) (250 MW solar PV)	Carrizo Valley, San Luis Obispo County	Under environmental review
LADWP and OptiSolar Power Plant (68 MW solar PV)	Imperial County, SR 111	Under environmental review
Topaz Solar Farm (First Solar) (550 MW solar PV)	Carrizo Valley, San Luis Obispo County	Under environmental review
AV Solar Ranch One (230 MW solar PV)	Antelope Valley, Los Angeles County	Under environmental review
Bethel Solar Hybrid Power Plant (49.4 MW hybrid solar thermal and biomass)	Seeley, Imperial County	Under environmental review
Mt. Signal Solar Power Station (49.4 MW hybrid solar thermal and biomass)	8 miles southwest of El Centro, Imperial County	Under environmental review
WIND PROJECTS		
Alta-Oak Creek Mojave Project (up to 800 MW)	Kern County, west of Mojave	Under environmental review
PdV Wind Energy Project (up to 300 MW)	Kern County, Tehachapi Mountains	Approved
City of Vernon Wind Energy Project (300 MW)	City of Vernon	Information not available
Manzana Wind Project (246 MW)	Kern County	Information not available
Iberdrola Tule Wind (200 MW)	San Diego County, McCain Valley	EIR/EIS in progress
Padoma Wind Energy (175 MW)	Shasta County	Information not available
Pine Canyon (150 MW)	Kern County	Information not available
Shiloh III (200 MW)	Montezuma Hills, Solano County	Information not available

Project Name	Location	Status
AES Daggett Ridge (84 MW)	San Bernardino	EIS in progress
Granite Wind, LLC (81 MW)	San Bernardino	EIR/EIS in progress
Bear River Ridge (70 MW)	Humboldt County	Information not available
Aero Tehachapi (65 MW)	Kern County	Information not available
Montezuma Wind II (52-60)	Montezuma Hills, Solano County	Information not available
Tres Vaqueros (42 MW wind repower)	Contra Costa County	Information not available
Montezuma Hills Wind Project (34-37 MW)	Solano County	Information not available
Solano Wind Project Phase 3 (up to 128 MW)	Montezuma Hills, Solano County	Under environmental review
Hatchet Ridge Wind Project	Shasta County, Burney	Under construction
Lompoc Wind Energy Project	Lompoc, Santa Approved Barbara County	
Pacific Wind (Iberdrola)	McCain Valley, San Diego County  Under environn review	
TelStar Energies, LLC (300 MW)	Ocotillo Wells, Under environme review	
GEOTHERMAL PROJECTS		
Buckeye Development Project	Geyserville, Sonoma	Under environmental review
Orni 18, LLC Geothermal Power Plant (49.9 MW)	Brawley, Imperial County	Information not available
Black Rock Geothermal 1,2,and 3	Imperial County	Information not available

<sup>\*</sup> This list is compiled from the projects on CEQAnet as of November 2009 and the projects located on private or State lands that are listed on the Energy Commission Renewable Action Team website as requesting ARRA funding. Additional renewable projects proposed on private and State lands but not requesting ARRA funds are listed on the website.

Source: CEQAnet [http://www.ceqanet.ca.gov/ProjectList.asp], November 2009 and CEC Renewable Action Team – Generation Tracking for ARRA Projects 12/29/2009 [http://www.energy.ca.gov/33by2020/documents/2009-12-29/2009-12-29\_Proposed\_ARRA\_Renewable\_Projects.pdf]

## Cumulative Table 2 Existing Projects in the Newberry Springs/Ludlow Area

ID	Project Name	Location	Agency/ Owner	Status	Project Description
1	Twentynine Palms Marine Corps Air Ground Combat Center (MCAGCC)	Morongo Basin (to the south of project site)	U.S. Marine Corps	Existing	The Marine Corps' service-level facility for Marine Air Ground Task Force training. It covers 596,000 acres to the south of the Calico Solar Project site and north of the city of Twentynine Palms
2	SEGS I and II	Near Daggett (17 miles west of project site)	Sunray Energy, Inc.	Existing	Solar parabolic trough facilities generating 13.8 MW and 30 MW, respectively.
3	CACTUS (formerly Solar One and Solar Two)	Near Daggett (to the west of project site)	University of California Davis	Existing	A non-working 10 MW solar power tower plant converted by UC Davis into an Air Cherenkov Telescope to measure gamma rays hitting the atmosphere. The site is comprised of 144 heliostats. This project had its last observational run in 2005. SCE has requested funds from the California Public Utilities Commission to decommission the Solar Two project. (UC Davis 2009)
4	Mine	2 miles west of project site along I-40		Existing	Small-scale aggregate operation (AFC p. 5.3-12)
5	Mine	14 miles west of project site along I-40		Existing	Larger aggregate mining operation that produced less than 500,000 tons per year in 2005 (AFC p. 5.3-12)

Source: These projects were identified through a variety of sources including the project AFC (Section 5.18) and websites of the San Bernardino County Land Use Services Department, BLM, CEC and individual projects.

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# Cumulative Table 3 Future Foreseeable Projects in the Newberry Springs/Ludlow Area

ID	Project Name	Location	Agency/ Owner	Status	Project Description
A	SES Solar Three (CACA 47702)	T's. 8, 9N., R5E (Immediately west of project site)	SES Solar Three, LLC	BLM received completed amended application June 2007. SES withdrew the application for Solar Three in December 2009. As there was a second-in-line application, this application becomes the project proposed at this location.	914 MW Stirling solar plant on 6,779-acre site.
В	Broadwell BrightSource (CACA 48875)	Broadwell Valley (T'8N and 9N; R7E) – in northeast direction of project site	BrightSource Energy, Inc.	Application filed with BLM. Potential conflict with proposed National Monument. Plans withdrawn/put on hold in September 2009.	5,130-acre solar thermal facility using power tower technology.
С	SCE Pisgah Substation expansion	immediately southeast of project site	Southern California Edison		Substation upgrade from 220 kV to 500 kV

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ID	Project Name	Location	Agency/ Owner	Status	Project Description
	Pisgah-Lugo transmission upgrade	Pisgah Substation (SE side of project site) to Lugo Substation (near Hesperia)	Southern California Edison		The proposed 850 MW Calico Solar Project would require removal of 65 miles of existing 220-kV transmission line and reinstallation with a 500-kV line.
					The Reduced Acreage Alternative (275 MW) would require an upgrade of the telecommunication facilities serving the existing 200-kV Pisgah-Lugo transmission line. Specifically, it would require:
					Replacement of a portion of existing Eldorado-Lugo 500 kV overhead ground wire with new optical ground wire between the Lugo and Pisgah Substations
					Installation of a new fiber-optic line between the Pisgah Substation and Cool Water Substation (new fiber to be installed on approximately 20 miles of existing electric distribution poles).
E	Twentynine Palms Expansion	Morongo Basin (south of project site)	U.S. Marine Corps	NOI to prepare EIS to study alternatives published in Oct. 2009. Draft EIS expected September 2010.	400,000-acre expansion on the east, west, and south of the existing 596,000-acre Twentynine Palms Marine Corps base. In June 2009, approximately 60,000 acres in all study areas were removed from further study, leaving 360,000 acres under study (USMC 2009).
F	Solel, Inc. (CACA 049424)	Southwest of proposed site, immediately north of Twentynine Palms MCAGCC	Solel, Inc.	BLM received application in July 2007, POD is under review.	600 MW solar thermal plant proposed on 7,453 acres.

ID	Project Name	Location	Agency/ Owner	Status	Project Description
G	Wind project (CACA 48629)	Black Lava T2N, R5E, T1N, R5E	Oak Creek Energy	BLM received application December 2006. Issues with partial location in ACEC.	Wind project on 17,920 acres
Н	Wind Project (CACA 48667)	South Ludlow T6N/R6E, T7N/R6E, T6N/R7E, T7N/R7E, T6N/R8E, T7N/R8E (In southeast direction of project site)	Oak Creek Energy	Pending	Wind project on 25,600 acres
I	Wind project (CACA 48472)	Troy Lake T9N&10N, R4E (In west direction of project site)	Power Partners SW (enXco)	Pending review of EA.	Wind project on 10,240 acres
J	Twin Mountain Rock Venture	10 miles west of Ludlow and 1 mile south of I-40; APN 0552-011-10-0000	Rinker Materials	Permit granted to extend permit to 2018	Plan to re-permit a cinder quarry on approximately 72 acres of leased land. No development activity has occurred on project site.
K	Solar thermal (CACA 49429)	Stedman (in southeast direction of project site)	Solel, Inc.	Application filed with BLM.	600 MW solar project on 14,080 acres. POD under review.
	Proposed National Monument (former Catellus Lands)	Between Joshua Tree National Park and Mojave National Preserve		In December 2009, Sen. Feinstein introduced bill S.2921 that would designate 2 new national monuments including the Mojave Trails National Monument.	The proposed Mojave Trails National Monument would protect approximately 941,000 acres of federal land, including approximately 266,000 acres of the former railroad lands along historic Route 66. The BLM would be given the authority to conserve the monument lands and also to maintain existing recreational uses, including hunting, vehicular travel on open roads and trails, camping, horseback riding and rockhounding.

ID	Project Name	Location	Agency/ Owner	Status	Project Description
	BLM Renewable Energy Study Areas	Along the I-10 corridor between Desert Center and Blythe	BLM	Proposed, under environmental review	The DOE and BLM identified 24 tracts of land as Solar Energy Study Areas in the BLM and DOE Solar PEIS. These areas have been identified for in-depth study of solar development and may be found appropriate for designation as solar energy zones in the future.

Source: Projects were identified through a variety of sources including the project AFC (Section 5.18) and Applicant's Submittal of CAISO Reports, SES 2010e and websites of the San Bernardino County Land Use Services Department, BLM, CEC and individual projects.

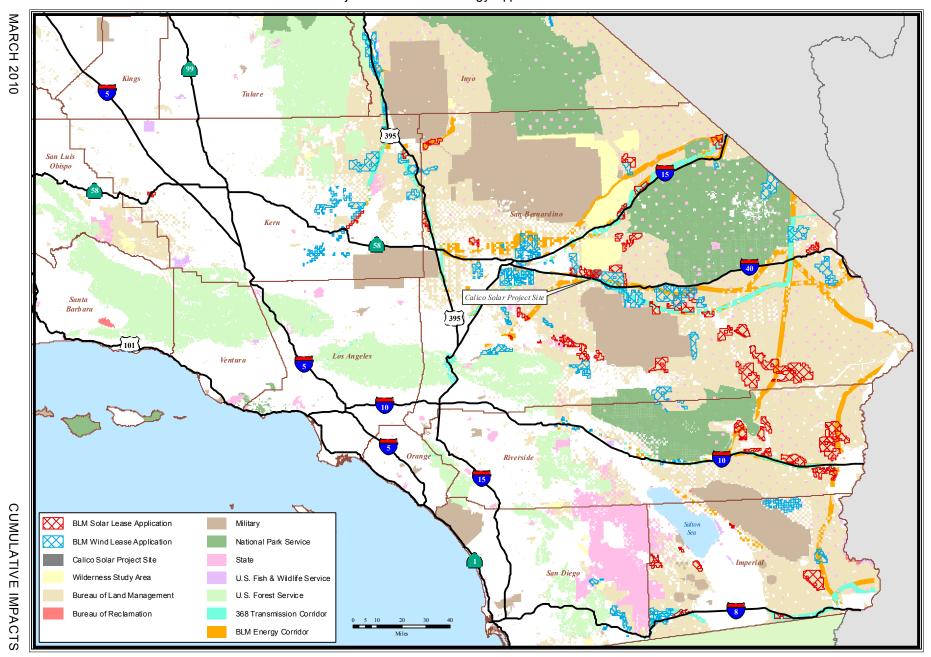
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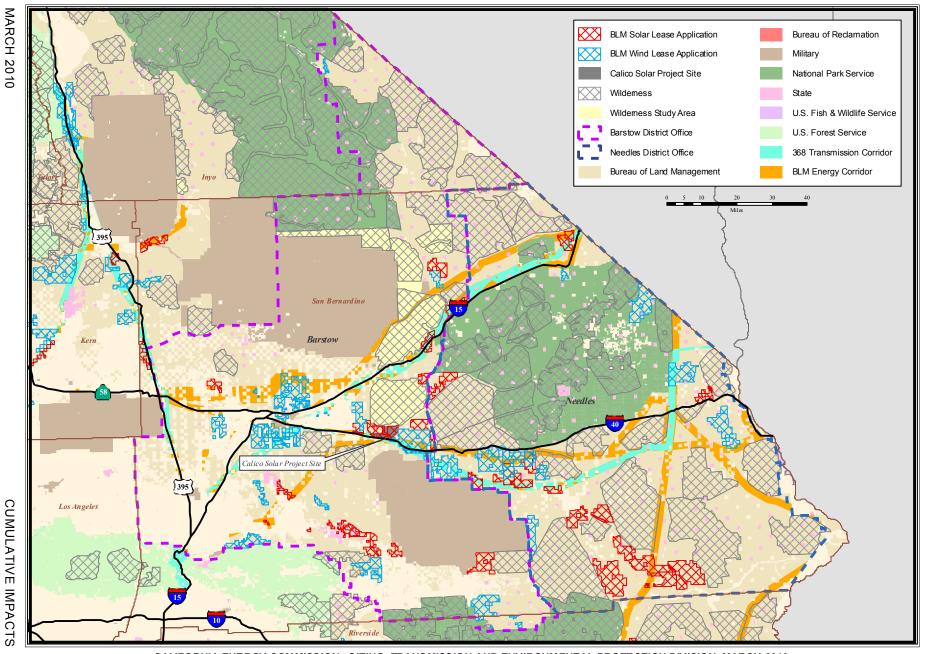
CUMULATIVE IMPACTS - FIGURE 1

Calico Solar Project - Renewable Energy Applications in the California Desert



CUMULATIVE IMPACTS - FIGURE 2

Calico Solar Project - Renewable Energy Applications in the Barstow & Needles District Areas



CUMULATIVE IMPACTS - FIGURE 3

Calico Solar Project - Newberry Springs/Ludlow Area Existing & Future/Foreseeable Projects

